SIGNAL DETECTION THEORY (PYQS)

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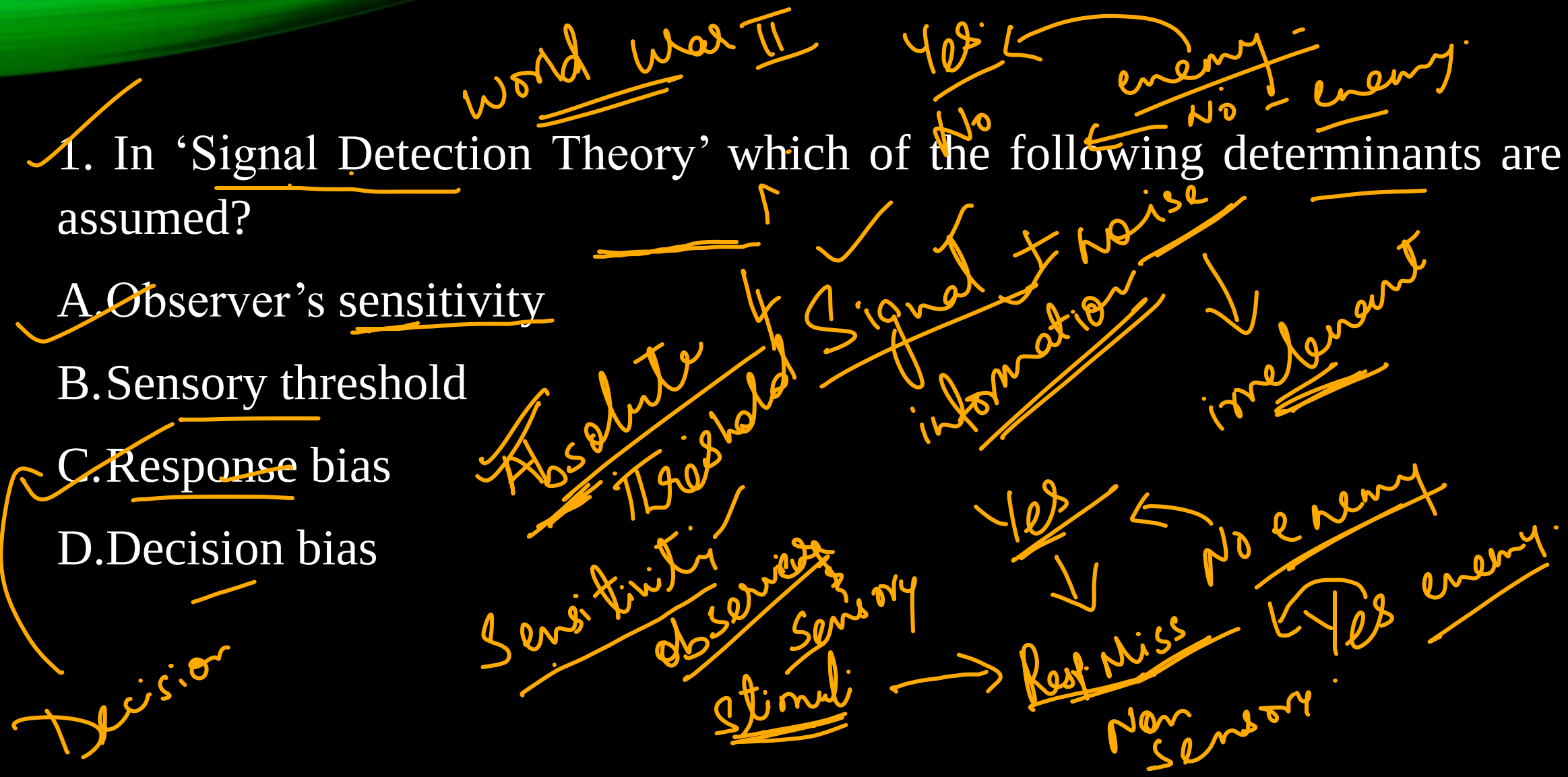
1. In ‘Signal Detection Theory’ which of the following determinants are assumed?

A. Observer’s sensitivity

B. Sensory threshold

C. Response bias

D. Decision bias



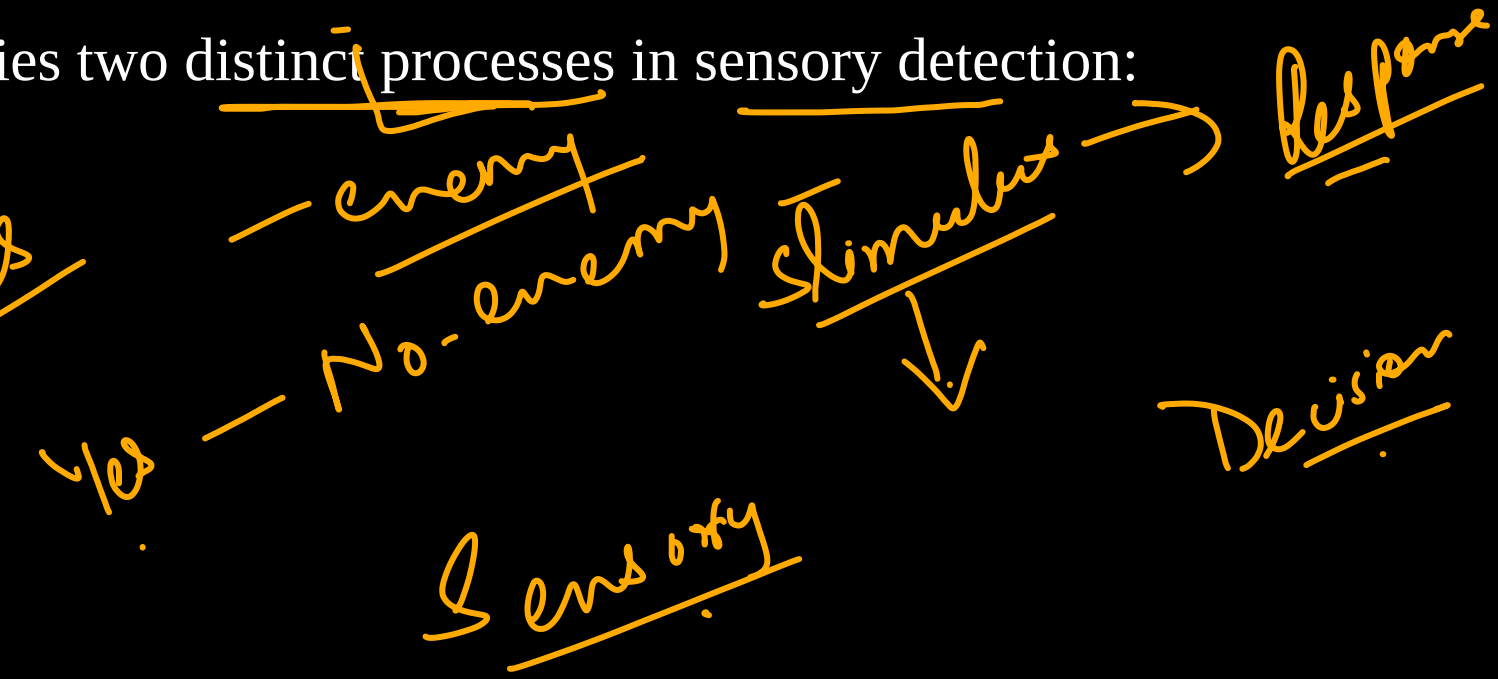
2. Signal detection theory identifies two distinct processes in sensory detection:

A. Sensory process

B. Decision process

C. Motivational process

D. Response bias



- **Codes**

A. (a) and (b) only

B. (c) and (d) only

C. (a) and (c) only

D. (a) and (d) only

3. Signal detection depends upon

A.Motivation and experiences

B.Signal intensity and noise

C.Sensitivity and response criterion

D.Absolute and relative threshold

4. List I

(a)Hit

(b)Miss

(c)False alarm

(d)Correct rejection

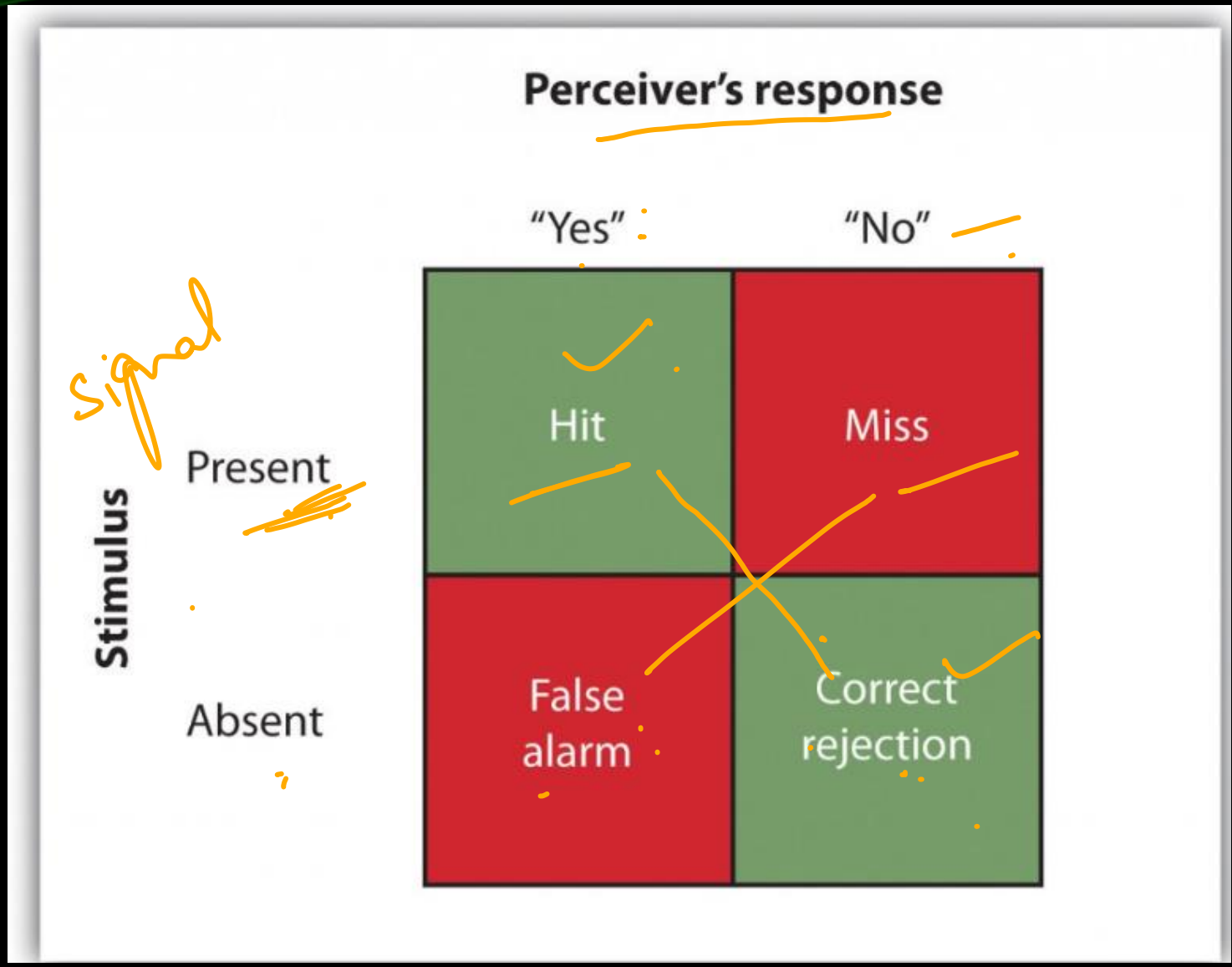
List II

(i) Signal is present but response is no

(ii) Signal is present and response is yes

(iii) Signal is absent and the response is no

(iv) Signal is absent and the response is yes.


Perceiver's response
"Yes"
"No"
Stimulus
Present
Absent
Hit
Miss
False alarm
Correct rejection

5. According to signal detection theory detection of stimuli depends on:

a) Their physical energy

b) Internal factors like relative costs

c) Absolute threshold

d) Internal factors like benefits with detecting their presence.

- **Codes:**

A. (a), (b), (c)

B. (b), (c), (d)

C. (c), (a), (d)

D. (a), (b), (d)

6. 1. Assertion (A): Vigilance refers to a person attending to a field of stimulation over a prolonged period of time in which the person seeks to detect the appearance of a particular target stimulus.

2. Reason (R): Signal Detection Theory suggests that detection of stimuli depends on their physical energy and on internal factors

a). Both (A) and (R) are true and (R) is the correct explanation of (A).

b). Both (A) and (R) are true, but (R) is not the correct explanation of (A).

c). (A) is true, but (R) is false.

d). (A) is false, but (R) is true

7. Assertion (A): Signal detection theory measures components of a person's ability to detect signals – perceptual sensitivity and decision criterion.
2. Reason (R): Studies of vigilance have revealed that the ability to detect an event is dependent on various factors such as training and expectations.

a). Both (A) and (R) are true and (R) is the correct explanation of (A).
b). Both (A) and (R) are true, but (R) is not the correct explanation of (A).
c). (A) is true, but (R) is false.
d). (A) is false, but (R) is true

8. In a signal detection task, the liberal observer shall having:

i). Bias to make more yes responses.

ii). Lesser expectations that signal is present.

iii). High hit rate and low false alarm rate.

iv). High hit rate as well high false alarm rate.

v). Equally likely to make yes or no responses.

vi). Greater expectations that signal is present.

a). I, II, V

b). I, IV, VI

c). II, III, V

d). IV, V, VI

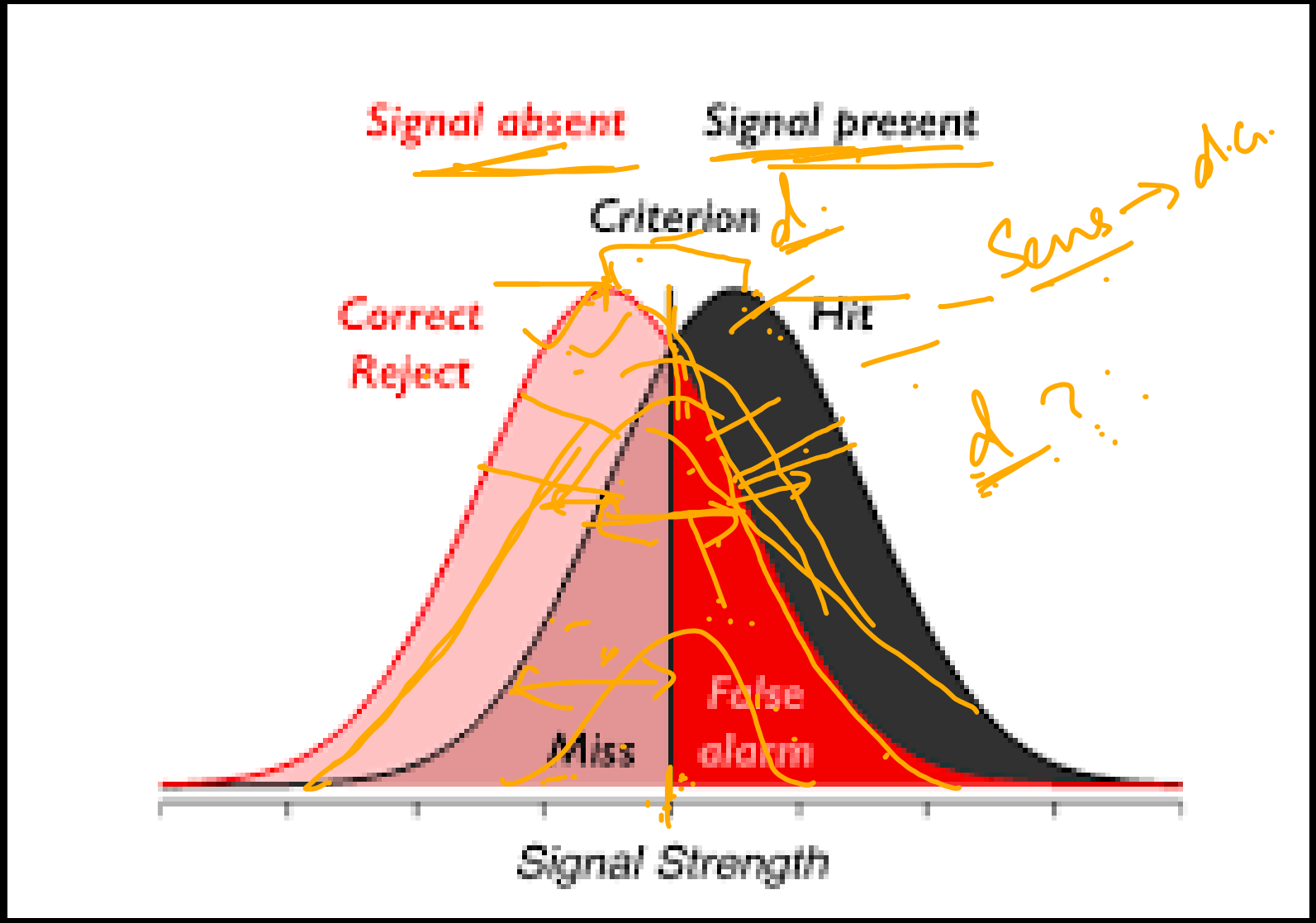
9. In which case the sensitivity “d” shall be high in a signal detection task?

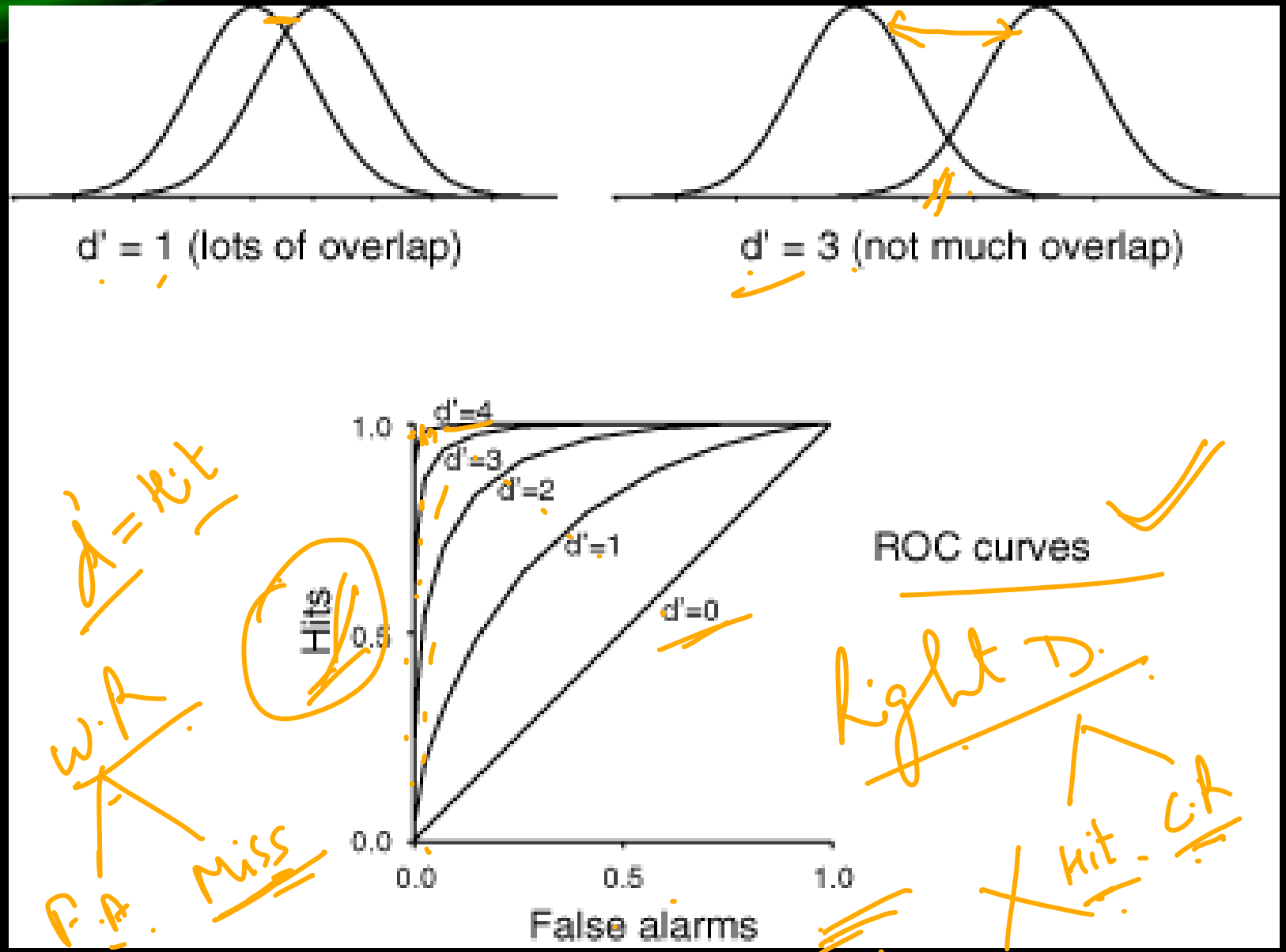
a). When proportion of hit responses exceeds the proportion of false alarm responses a lot.

b). When proportion of false alarm responses exceeds the proportion of hit responses a lot.

c). When proportion of hit responses and the proportion of false alarm responses are equal.

d). When proportion of hit responses exceeds the proportion of false alarm responses a little.


Signal absent
Signal present
Criterion
Correct Reject
Hit
Miss
False alarm
Signal Strength


d' = 1 (lots of overlap)
d' = 3 (not much overlap)
d'=4
d'=3
d'=2
d'=1
d'=0
1.0
0.5
0.0
Hits
0.0
0.5
1.0
False alarms
ROC curves

10. The perception of a stimulus that is below the threshold for conscious experience is termed as

a). Just noticeable difference

b). Differential threshold

c). Signal detection

d). Subliminal perception

Thank You ☺